Status of the Claims

1. (Currently Amended) An integrated circuit for a printhead, comprising:

a substrate without a grown field oxide layer;

a set of transistors formed in the substrate wherein the gate of each of the set of transistors forms at least one closed loop; and

an ejection element coupled to at least one of the set of transistors wherein the ejection element is disposed over the substrate ~~without an intervening field oxide layer~~with an intervening dielectric layer.

2. (Currently Amended) The integrated circuit of claim 1, ~~further comprising~~ awherein the intervening dielectric layer disposed between the ejection element and the substrate ~~having~~has a thickness greater than 2,000 Angstroms.

3. (Currently Amended) The integrated circuit of claim 2, wherein the intervening dielectric layer is phosphosilicate glass.

4. (Currently Amended) The integrated circuit of claim 2, wherein the intervening dielectric layer is comprised of a layer of thermal oxide and a layer of phosphosilicate glass.

5. (Previously Amended) The integrated circuit of claim 1 wherein each of the set of transistors has a bulk that is not directly connected to the substrate.

6. (Previously Amended) The integrated circuit of claim 1 wherein the set of transistors is formed without an active mask definition.

7. (Previously Amended) The integrated circuit of claim 1 wherein the set of transistors has a gate oxide formed with a layer of silicon dioxide and a layer of silicon nitride.

8. (Original) A printhead, comprising:

the integrated circuit of claim 1; and

an orifice layer defining a nozzle fluidically coupled to the ejection element and wherein the nozzle is further fluidically coupled to a fluid channel to deliver fluid to the ejection element.

9. (Original) A fluid cartridge, comprising:

the printhead of claim 8;

a body having a fluid reservoir fluidically coupled to the fluid channel of the printhead; and

a pressure regulator for maintaining a negative pressure relative to the ambient air pressure to prevent the fluid within the printhead from drooling out of the nozzle without activation of the ejection element.

10. (Original) A recording device, comprising:

the fluid cartridge of claim 9; and

a transport mechanism for moving the fluid cartridge in at least one direction with respect to a recording media.

11. (Currently Amended) An integrated circuit for a printhead, comprising:

a substrate without a grown field oxide layer;

a set of transistors, wherein all transistors on the substrate are formed with at least one closed loop structure;

a set of ejection elements disposed over the substrate ~~without an intervening field oxide layer~~with an intervening dielectric layer.

12. (Currently Amended) The integrated circuit of claim 11, ~~further comprising~~ awherein the intervening dielectric layer disposed between the ejection element and the substrate ~~having~~has a thickness greater than 2,000 Angstroms.

13. (Currently Amended) The integrated circuit of claim 12, wherein the intervening dielectric layer is phosphosilicate glass.

14. (Currently Amended) The integrated circuit of claim 12, wherein the intervening dielectric layer is comprised of a layer of thermal oxide and a layer of phosphosilicate glass.

15. (Original) The integrated circuit of claim 11 wherein the at least one transistor has a bulk that is not connected directly to the substrate.

16. (Original) The integrated circuit of claim 11 wherein the at least one transistor is formed without an active mask definition.

17. (Original) The integrated circuit of claim 11 wherein the transistor has a gate oxide formed with a layer of silicon dioxide and a layer of silicon nitride.

18. (Original) A printhead, comprising:

the integrated circuit of claim 11; and

an orifice layer defining a nozzle fluidically coupled to the ejection element and wherein the nozzle is further fluidically coupled to a fluid channel to deliver fluid to the ejection element.

19. (Original) A fluid cartridge, comprising:

the printhead of claim 18;

a body having a fluid reservoir fluidically coupled to the fluid channel of the printhead; and

a pressure regulator for maintaining a negative pressure relative to the ambient air pressure to prevent the fluid within the printhead from drooling out of the nozzle without activation of the ejection element.

20. (Original) A recording device, comprising:

the fluid cartridge of claim 19; and

a transport mechanism for moving the fluid cartridge in at least one direction with respect to a recording media.

21. (Currently Amended) A printhead having a set of transistors integrated thereon, the printhead comprising:

a substrate without a grown field oxide layer;

each transistor positioned on the substrate, the transistors comprising a source region, a drain region, and a gate positioned between the source region and the drain region, the gate forming a closed loop and comprising,

a layer of silicon dioxide not of field oxide disposed over the substrate, and

a layer of polycrystalline silicon directly on the layer of silicon dioxide;

a layer of dielectric material covering the substrate having a plurality of openings there through, the openings providing access the source region, the drain region, and the gate of the transistor;

a layer of electrically resistive material positioned on the layer of dielectric material and in direct electrical contact with the source region, the drain region, and the gate through the openings;

a layer of conductive material affixed to a portion of the layer of electrically resistive material in order to form a multi-layer structure , the layer of electrically resistive material having at least one uncovered section capable of functioning as an ejection element disposed over the layer of dielectric material and the substrate, the layer of electrically resistive material being covered with the layer of conductive material at the source region, the drain region and the gate of the transistor;

a portion of protective material positioned on the ejection element; and

an orifice layer having at least one nozzle, the orifice layer secured to the portion of protective material having a section thereof removed directly beneath the nozzle in order to form a fluid well in order to impart energy from the ejection element.

22. (Original) The printhead structure of claim 21 wherein the layer of electrically resistive material is comprised of a mixture of tantalum and aluminum.

23. (Original) The printhead structure of claim 21 wherein the layer of electrically resistive material is comprised of polycrystalline silicon.

24. (Original) The printhead structure of claim 21 wherein the layer of conductive material comprises a metal selected from the group consisting of aluminum, copper, and gold.

25. (Original) The printhead structure of claim 21 wherein the layer of dielectric material comprises a layer of phosphosilicate glass.

26. (Original) The printhead structure of claim 21 wherein the layer of dielectric material comprises a layer of thermal oxide.

27. (Original) The printhead structure of claim 21 wherein the transistor has a gate oxide a layer of silicon nitride disposed between the gate and substrate.

28. (Original) The printhead structure of claim 21 wherein the portion of protective material comprises:

a first passivation layer positioned on the ejection element, the first passivation layer being comprised of silicon nitride;

a second passivation layer positioned on the first passivation layer, the second passivation layer being comprised of silicon carbide;

a cavitation layer positioned on the second passivation layer, the cavitation layer being comprised of a metal selected from the group consisting of tantalum, tungsten, and molybdenum; and

a fluid barrier layer positioned on the cavitation layer, the fluid barrier layer being comprised of plastic, the orifice layer being secured to the fluid barrier layer.

Claims 29-45 (Cancelled)